8, 12, 16 CHANNEL MIC/LINE MIXER OWNERS MANUAL

Ultra low noise 8,12,16 - Channel Mic / Line Mixer

- ▲ 8, 12, 16 Mono Input Channels with silver plated XLRs and balanced Line Inputs
- ▲ Ultra-low noise discrete Mic Preamps with +48 V Phantom Power
- ▲ Extremely high headroom - offering more dynamic range
- ▲ Balanced Inputs for highest signal integrity
- ▲ Ultra-musical 3-band EQ+FREQ on all mono channels
- ▲ Peak LEDs all Mono Channels
- ▲ 2 Aux Send per channel for external effects and monitoring
- ▲ 2X256DSP Digital of the effect system inside
- ▲ Separate Master Mix, Headphone Outputs
- ▲ 2-Track Inputs assignable to Master Mix
- ▲ Highly accurate 12 segment Bargraph Meters

SAFETY INSTRUCTIONS

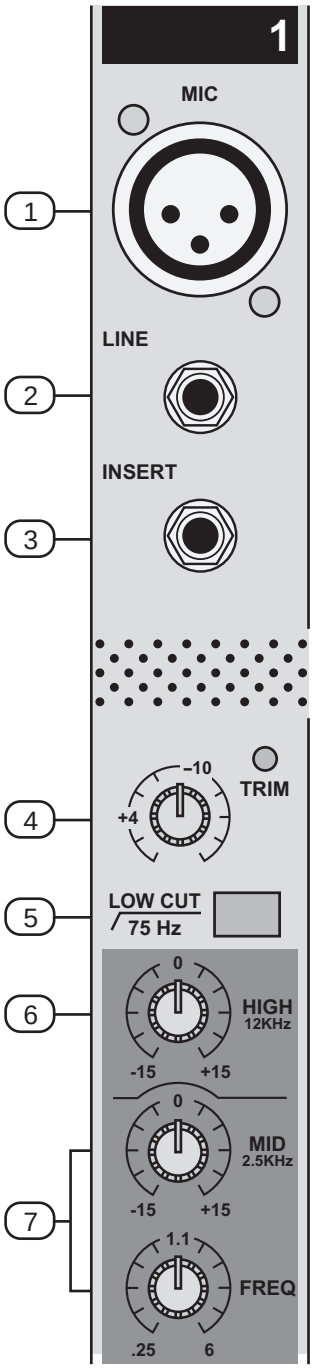
CAUTION: To reduce the risk of electrical shock, do not remove the cover (or back). No user serviceable parts inside; refer servicing to qualified personnel.

WARNING: To reduce the risk of fire or electrical shock, do not expose this appliance to rain or moisture.

This symbol, wherever it appears, alerts you to the presence of uninsulated dangerous voltage inside the enclosure - voltage that may be sufficient to constitute a risk of shock.

This symbol, wherever it appears, alerts you to important operating and maintenance instructions in the accompanying literature. Read the manual.

A. INPUT CHANNEL SECTION



1. BALANCE INPUT (MIC)

Electronially Balanced inputs acceptable a standard XLR male connector.
+ 48V Phantom Power available on each input Mic socket.
and this switch is on Rear Phantom Power.

2. LINE INPUT

The unbalanced Mic input is provided for the use of an unbalance mic and is designed to accept an unbalanced high impedance input signal.
(This use for connection Deck, Turntable, Keyboard etc..)

3. INSERT

The INSERT is a break point in the input channel signal path. It allows the signal to be taken out from the mixer, through an external equipment such as a compressor, and then back to the mixer to continue the final mix output.

4. TRIM

This has a function which adjusts the input sensitivity of each channel in order to input the constant level of the signal.

5. LOW CUT

Slide down the slide-switch, insert the 18 dB per octave 75Hz low cut filter in the signal path. This low cut filter is useful on live vocals to reduce stage rumble or "popping" from microphones. It can also be used to cut off low frequency hum.

6. HIGH

Control the high frequency tone of each channel. Always set this control to the 12 o'clock position, but you can control the high frequency tone according to the speaker, the conditions of listening position and listener's taste. Clockwise rotation of the control increases level.

7. FREQUENCY + MID

This equalization has a “bell” response i.e. having reached maximum amplification or attenuation at the selected frequency, the amplitude response returns to zero either side of that frequency. The FREQ at which this occurs is variable between 250Hz. The GAIN is variable between ±15dB at the selected frequency with a fixed q of 1.5Q is a factor a bandwidth.

8. LOW

Control the low frequency tone of each channel. Always set this control to the 12 o'clock position, but you can control the low frequency tone according to the speaker, the conditions of listening position and listener's taste. Clockwise rotation of the control increases the level.

9. AUX 1,2

This is normally derived after the EQ section and channel fader (PRE-FADER, POSE-EQ), and is therefore unaffected by the fader position and routing status. This makes the send particularly suitable for foldback or monitor feeds, which need to be controlled separately from the main P.A. Mix. All pre-fade sends may be selected internally to be PRE-FADER, PRE-EQ.

10. EFX1,2

This is normally derived after the EQ and channel fader (POST FADER, POST EQ), and is therefore follow any changers in fader level. They are normally used to drive effects processing units which are fed back into the mixer and which must fade out with the input channel.

11. PAN

The pan control sends continuously variable amounts of the post fader signal to either the left or right and G1 or G2 main busses. In the center position equal amounts of signal are sent to the left and right or G1 & G2 busses.

12. STEREO (L-R)

Push the switch, can use ST L-R fader.
During the stereo L-R switch pushed, you can't use ST L-R fader.

13. GRPS 1-2

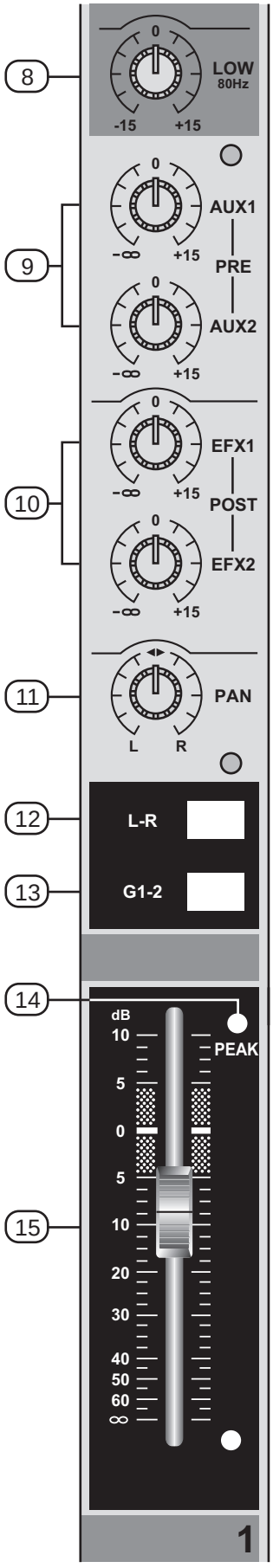
Push the switch, can use GROUP 1-2 fader.
During the G1-2 switch pushed, you can't use stereo L-R fader.

14. PEAK

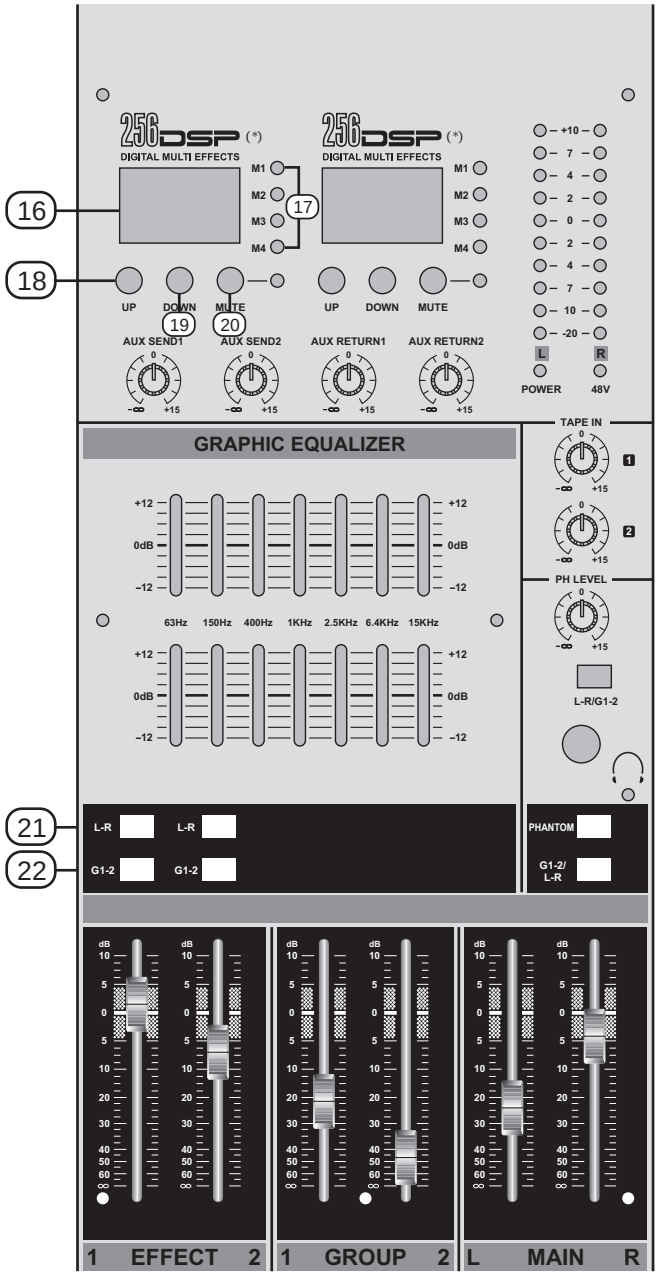
A red LED indicates a signal level at the insert return point, premaster fader, it illuminates at approximately 5 dB below clipping.

15. CHANNEL FADER

This is function to adjust the volume of signal connection into each channel and adjust the volume of output, together with master fader. Normal operating position is at the “O” mark, providing 4dB of gain adove that point, if required.



B. MASTER SECTION



16. EFFECT PROGRAMS

When adjust switch 17, 18, 19, 20 more effects are displayed.

17. Pre-set

Push more than 5 seconds, It automatacally memorize the displayed program number. Once Just Push M1. M2. M3. M4, always display memorized program.

18. UP TAPE SWITCH

One push, one program up push with more than 5 seconds hi-speed program up.

19. DOWN TAPE SWITCH

One push, one program down, push with more than 5 seconds, hi-speed program down.

20. MUTE

Effect ON/OFF.

21. EFFECT STEREO (L/R)

Depressing this switch, can let the EFFECT you need connect to the main control buses.

22. EFFECT GROUP(1-2)

Push the switch, can let the EFFECT you need connect to the main group buses.

23. EFFECT LEVEL

Using by this control, you can adjust signal level of echo repeat & exteral effect.

24. AUX SEND / RETURN

This is used for adjusting volume of AUX sound, when sending and return AUX singal to used jack.

25. OUTPUTS LEVEL INDICATOR

This is level meter which shows output levels of left & right channel condition on the way of operation, therefore, you can see output condition thru this master level indication.

26. POWER LED

The POWER LED will be turned on when strt working.

27. PHANTOM LED

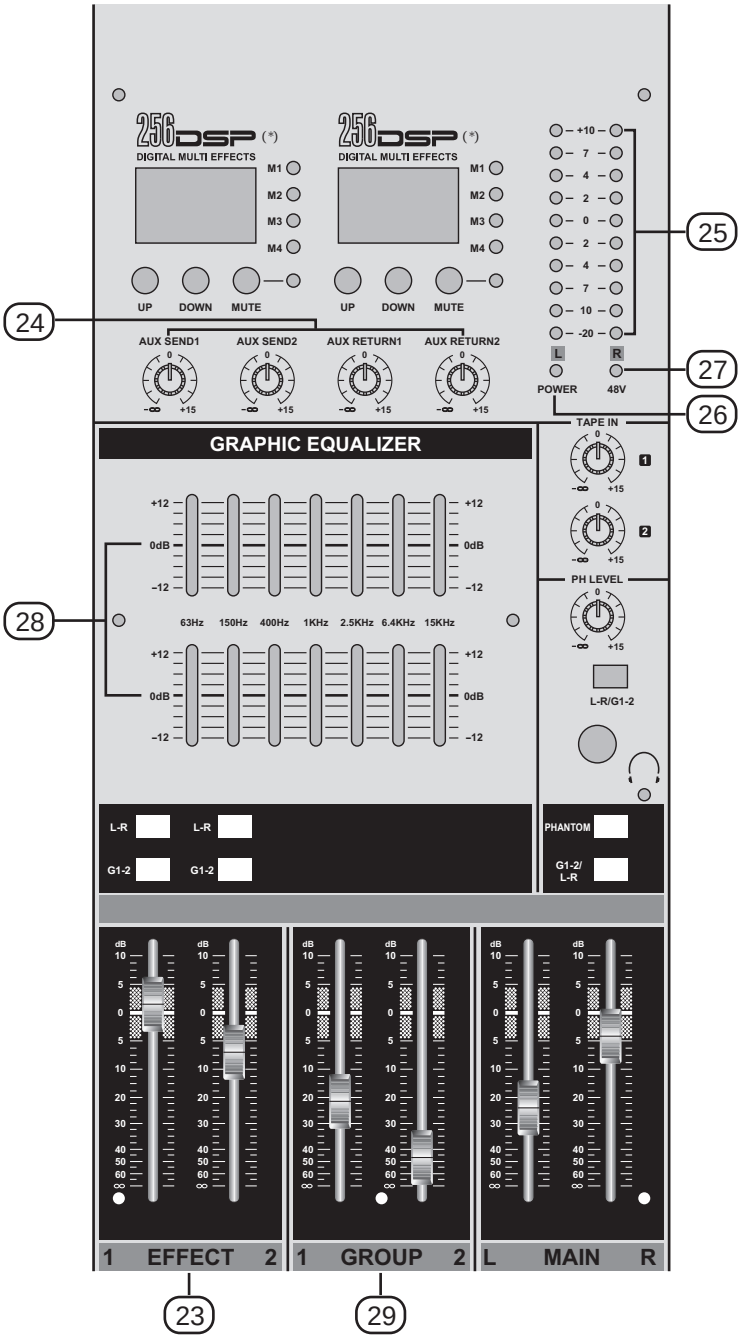
The LED will be turned on when strt 48V LED working.

28. STEREO GRAPHIC EQUALIZER

2X7-band equalizer is provided for tone control over each frequency, and for precise high quality sound by final tone control.

29. OUTPUT GROUPS 1-2 FADERS

Using by this control, you can adjust G1-2 output level.



30. OUTPUT MAIN FADER (LEFT/RIGHT)

This is a master fader for adjustment for volume of left/right output. Unity gain is the top their travel.

31. TAPE LEVEL

You can adjust the volume of TAPE in signal by this when connecting tape in.

32. HEADPHONE LEVEL

This is a single volume control sends the level to the headphones and main monitors.

33. L-R / G1-2

When L-R / G1-2 switch up, could monitor stereo (L-R) output signal, when L-R /G1-2 switch down, could monitor group (G1-2) output signal.

34. HEADPHONE JACK

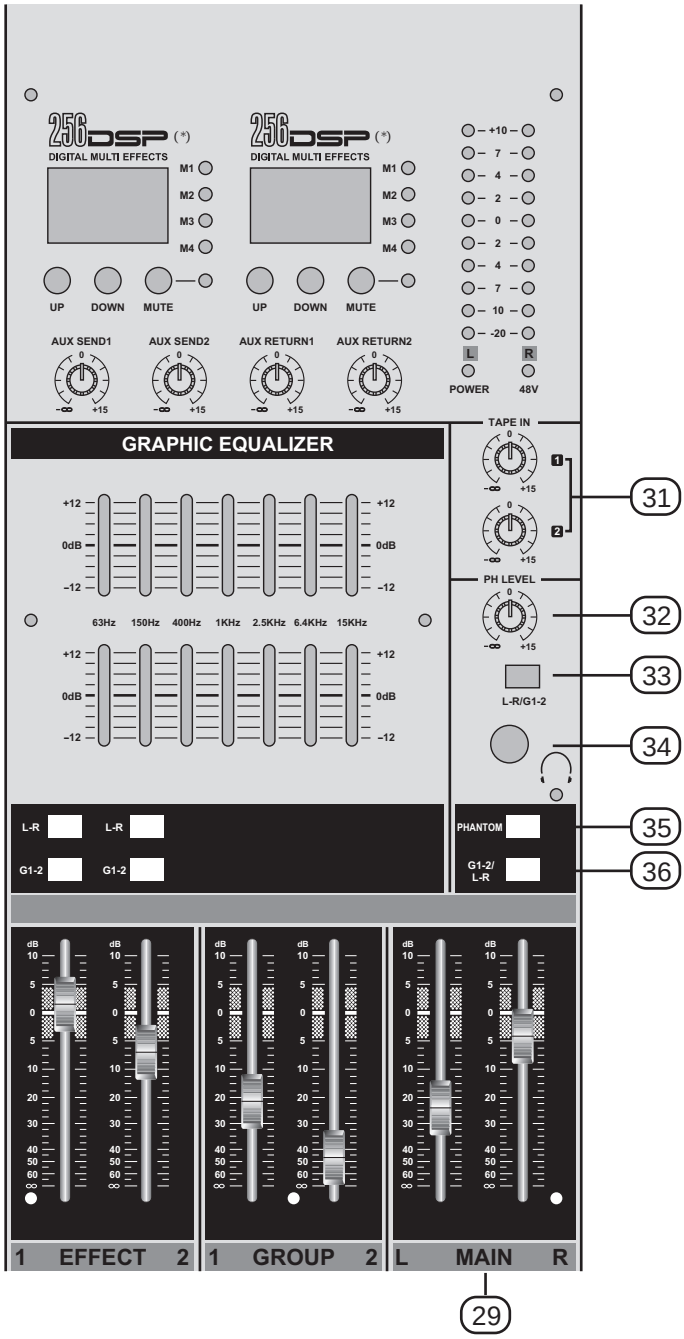
You can monitor working condition by sound thru the headphone.

35. PHANTOM POWER SWITCH/LED

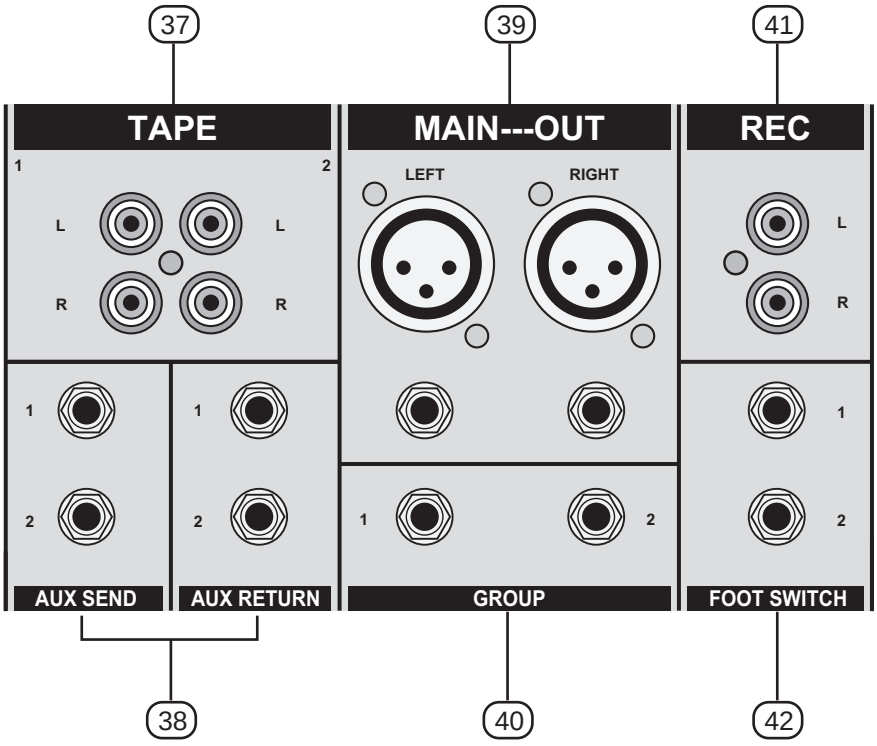
Depressing this switch applies 48V DC across all microphone input channels connectors for remote powering of condenser microphones.

36. L-R/G1-2 SWITCH

This switch routes the G1-2 mix output to the STEREO bus, allowing G1-2 bus to be used two mono subgroups mixed down to a single output when stereo is not required.



C. MIXER OUTPUT SECTION



37. TAPE INPUT JACK

This jack is to be connected with cassette deck when playing back.

38. STEREO AUX RETURNS & SENDS

This can be used to connect all kinds of effects from outside.

39. STEREO OUTPUT JACK (LEFT / RIGHT)

In this product, the final confirmed sound can be send to main amplifier through XLR & 1/4 jack.

40. GROUP 1-2 OUTPUT JACK

There are to be output with the volume control against inputting signal into GRPS 1-2 board.

41. RECORD JACK

This jack is to be connected with cassette deck when recording the mixed output.

42. FOOT SWITCH JACK

This jack used for converting between foot switch and DSP.

D. POWER SECTION

43. SPEAKER JACK

This is same functions as below but the using jack is different.

44. POWER SWITCH

Push marked (1), when you want to operate. The LED (SEE NO, 26) will be turned on when working

45. POWER JACK

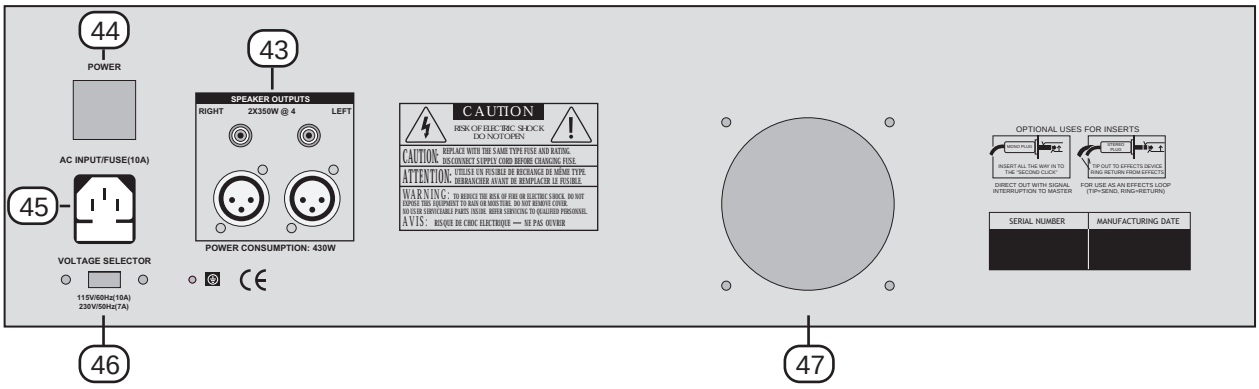
This is out of connect the power supply (2 X AC 120V or 230V) jack.

46. VOLTAGE SELECTOR

Push the switch, can select voltage you need.

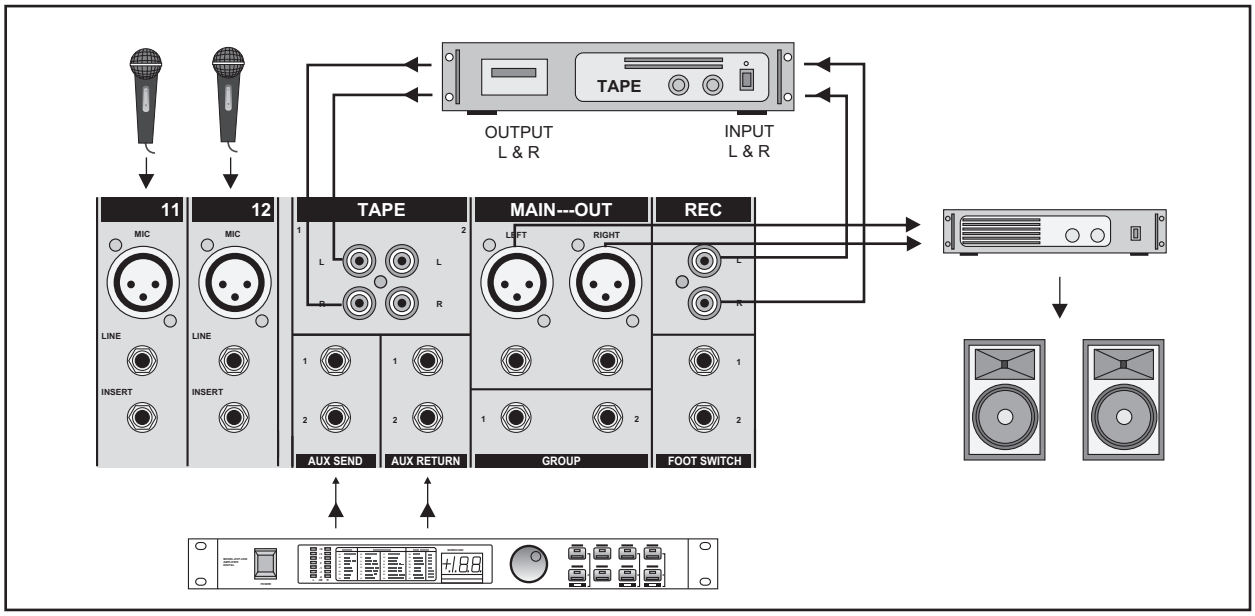
47. FAN

Use the switch, it can fan the heat out, protect amplifier against burning.



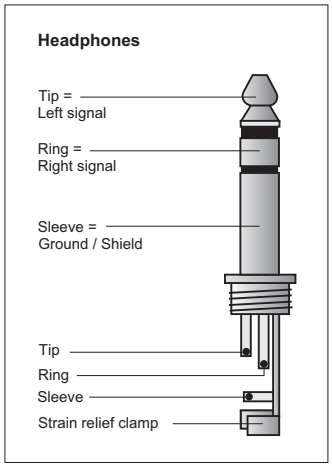
E. INSTALLATION

Experience tells us that the cables in a studio environment get tangled very quickly (inviting mistakes).

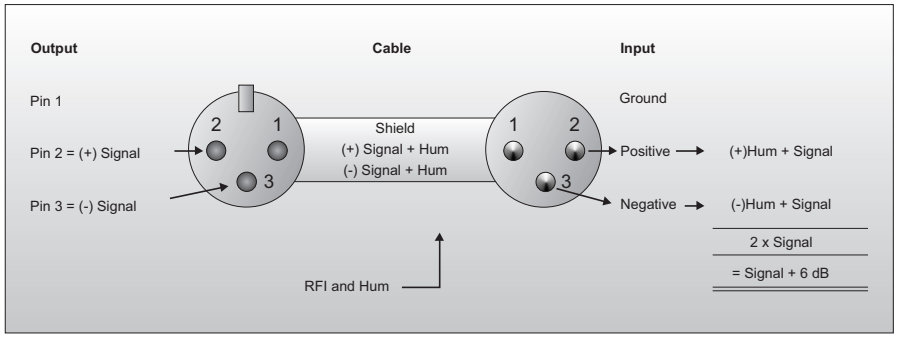


F. CONNECTIONS

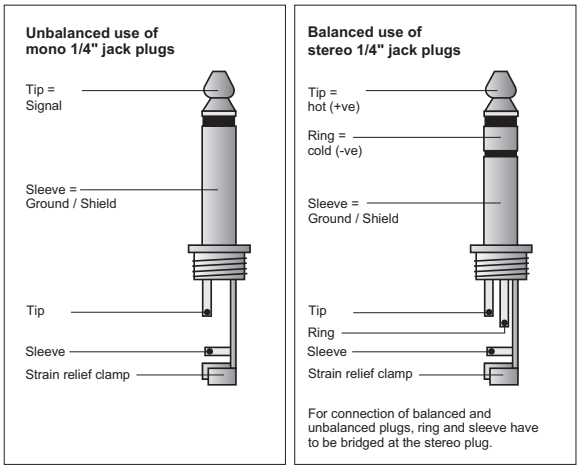
You will need a lot of cables for different purposes - see the following figures to make sure you have got the right ones. Unbalanced equipment may be connected to balanced inputs/outputs. Either use mono 1/4" jacks or connect ring and sleeve of TRS jacks.

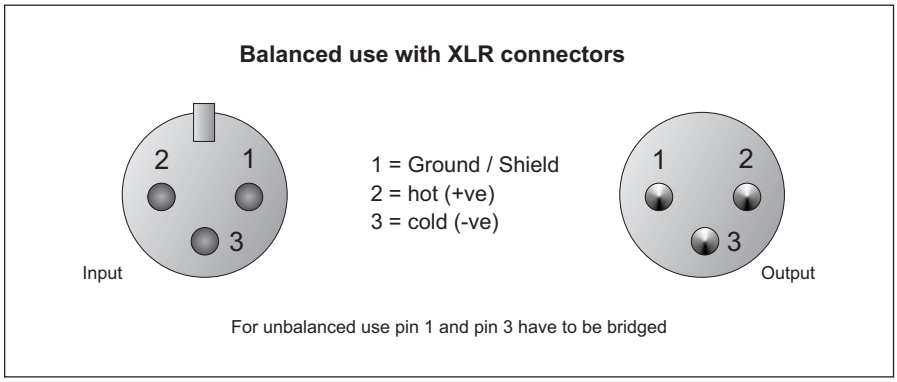


Headphone connection



Compensation of interference with balanced connections





Different plug types

G. APPENDIX

Specifications

Mono Inputs

Mic Input	electronically balanced, discrete input configuration
Bandwidth	10 Hz to 60 kHz ± 3 dB
Distortion (THD & N)	0.01% at +4 dBu, 1 kHz, Bandwidth 80 kHz
Mic E.I.N (22 Hz - 22 kHz)	-129.5 dBu, 150 Ohm source
	-117.3 dBqp, 150 Ohm source
	-132.0 dBu, input shorted
	-122.0 dBqp, input shorted
TRIM range	+10dB to +60dB
Line Input	electronically balanced
Bandwidth	10 Hz to 60 kHz ± 3 dB
Distortion (THD&N)	0.01% at +4 dBu, 1 kHz, Bandwidth 80 kHz
Line level range	+10 dBu to -40 dBu
Equalization	
Hi Shelving	12 kHz +/-15 dB
Mid Range	2.5 kHz +/-15 dB
Lo Shelving	80 Hz +/-15 dB

Steroe inputs

Line Input	unbalanced
Bandwidth	10 Hz to 55 kHz ±3 dB
Distortion (THD & N)	0.01% at +4 dBu, 1 kHz, bandwidth 80 kHz
Equalization	
Hi Shelving	12 kHz +/-15 dB
Lo Shelving	80 Hz +/-15 dB, Q fixed 2 oct

Master Mix section

Max Output	+22 dBu balanced
Aux Send Max Out	+22 dBu unbalanced
Control Room Out	+22 dBu unbalanced
Signal-To-Noise Ratio	112 dB, all channels at Unity Gain

Power supply

Mains Voltages	AC 120V 60Hz or 230V 50Hz

Power	8CH	12CH	16CH
	2X300W(4Ω)	2X350W(4Ω)	2X350W(4Ω)